

## 8.2 Rational Functions Quiz

NAME \_\_\_\_\_

KEY



Find the domain, vertical and horizontal asymptotes and any holes for each of the rational functions.

2.  $f(x) = \frac{x+5}{x+2}$

Domain:  $x \neq -2$ Vertical Asymptote(s):  $x = -2$ Hole(s): noneHorizontal Asymptote(s):  $y = 1$ 

2.  $g(x) = \frac{x^2 + 5x + 6}{x^2 - 2x - 8}$

Domain:  $x \neq -2, x \neq 4$ Vertical Asymptote(s):  ~~$x = -2$~~ ,  $x = 4$ Hole(s):  $x = -2$ Horizontal Asymptote(s):  $y = 1$ 

3.  $h(x) = \frac{3x^2 + 2x}{x+4}$

Domain:  $x \neq -4$ Vertical Asymptote(s):  $x = -4$ Hole(s): noneHorizontal Asymptote(s): none

4.  $f(x) = \frac{10}{3x}$

Domain:  $x \neq 0$ Vertical Asymptote(s):  $x = 0$ Hole(s): noneHorizontal Asymptote(s):  $y = 0$ 

Sketch the graph of the following rational functions. State any asymptotes, as well as any holes.

5.  $f(x) = \frac{10}{x^2 - 4}$

Domain:  ~~$x \neq 2, x \neq -2$~~ Vertical Asymptote(s):  $x = 2, x = -2$ Hole(s): noneHorizontal Asymptote(s):  $y = 0$ 

6.  $g(x) = \frac{4x^2 - 4x - 3}{2x^2 - x - 3}$

Domain:  ~~$x \neq \frac{3}{2}, x \neq -1$~~ Vertical Asymptote(s):  ~~$x = \frac{3}{2}, x = -1$~~ Hole(s):  $x = \frac{3}{2}$ Horizontal Asymptote(s):  $y = 2$ 